

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-217206
(43)Date of publication of application : 10.08.2001

(51)Int.Cl. H01L 21/285
C23C 16/34
C23C 16/44
H01L 21/203
H01L 27/04
H01L 21/822
H01L 27/105
H01L 27/108
H01L 21/8242

(21)Application number : 2000-371636
(22)Date of filing : 06.12.2000

(71)Applicant : SAMSUNG ELECTRONICS CO LTD
(72)Inventor : KYO SHOHAN
RIN GENSHAKU
CHAE YUN-SOOK
ZEN RINSO
SAI KICHIGEN

(30)Priority

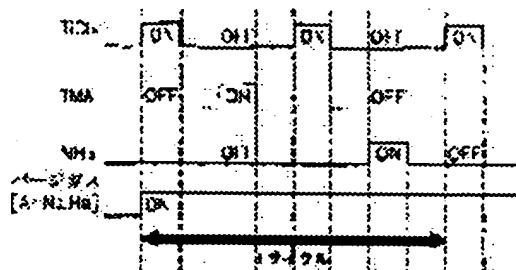
Priority number : 1999 9955835 Priority date : 08.12.1999 Priority country : KR
2000 200006251 10.02.2000 KR

(54) METHOD OF FORMING METALLIC LAYER UTILIZING ATOMIC LAYER VAPOR DEPOSITION METHOD AND SEMICONDUCTOR ELEMENT USING THE SAME

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a metallic layer forming method by which superior step coverage can be obtained by utilizing an atomic layer vapor deposition method, a desired resistance and electrical conductivity can be decided easily, and then, the diffusion of oxygen can be prevented, and to provide a semiconductor element equipped with a metallic layer formed by the method as a barrier metal layer or the lower or upper electrode of a capacitor.

SOLUTION: In this metallic layer forming method, atomic layers are alternately laminated upon another by alternately injecting source gases of a reactive metal A, nitrogen N, and an element B for amorphous coupling of the metal A with nitrogen N into a chamber by the atomic layer vapor deposition method. The semiconductor element is provided with a metallic layer formed by this method as a barrier metal layer, lower electrode, or upper electrode.



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